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Mastering Layers

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PTCuser WORLD EVENT 2007

Mastering Layers

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Poster Child

[illegible]DTM_PNT

[illegible]DTM_P

[illegible]CSYS

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]DTM_P

[illegible]

[illegible]

[illegible]CONS

[illegible]_SURFS

[illegible]CURVES

[illegible]

[illegible]

PNT79
FRONT
PNT101
ATTACH_MOUNT
ATTACH_POINT
PNT63
PNT55
PNT85
PNT105
PNT110
PNT119
PNT123
PNT86
2_ORIGIN
MOUNT
ATTACH_MOUNT
POINT

I Intend to show…

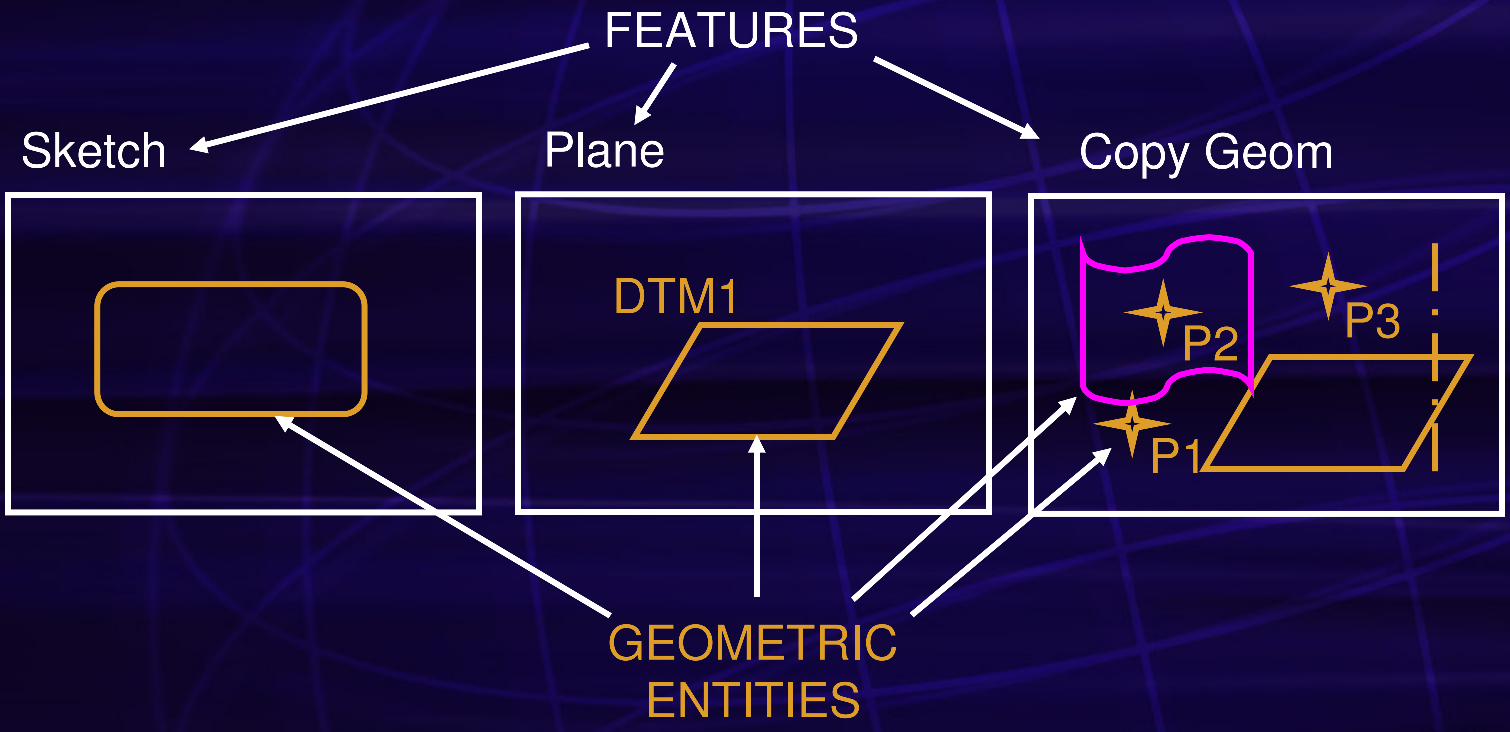
- How to easily predict the visibility of items, depending on the layer status. (Isolate, Hidden, Unhidden)
- How to make effective use of putting items onto multiple layers.
- And, I'll demonstrate some *cool mapkeys*, that are based the info presented. They allow the *quick* and *easy* clean up of the layers of an entire assembly and it's components.

So What Does Mastering Layers Involve?

- Understanding exactly what has been put onto the layers.
- Knowing *"Invisibility Rule #1".*
- Knowing how layer status impacts visibility.
- The effective use of placing items onto multiple layers.
  - This makes it easier to choose what you want to see, instead of everything you don't.

All Features Have Entities…

- Datum Features - Axis, Csys, Curves, Planes, Quilts, Tag Names…



Invisibility Rule #1

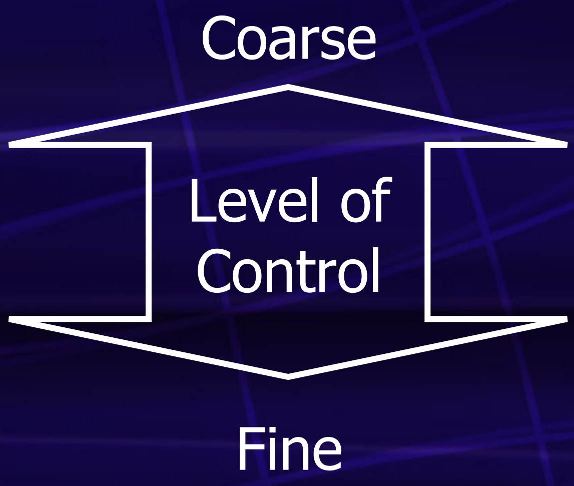
- *Once an item is rendered invisible; every sub item, in that branch of the model, is rendered invisible.*

Assembly

Part

Feature

Entity

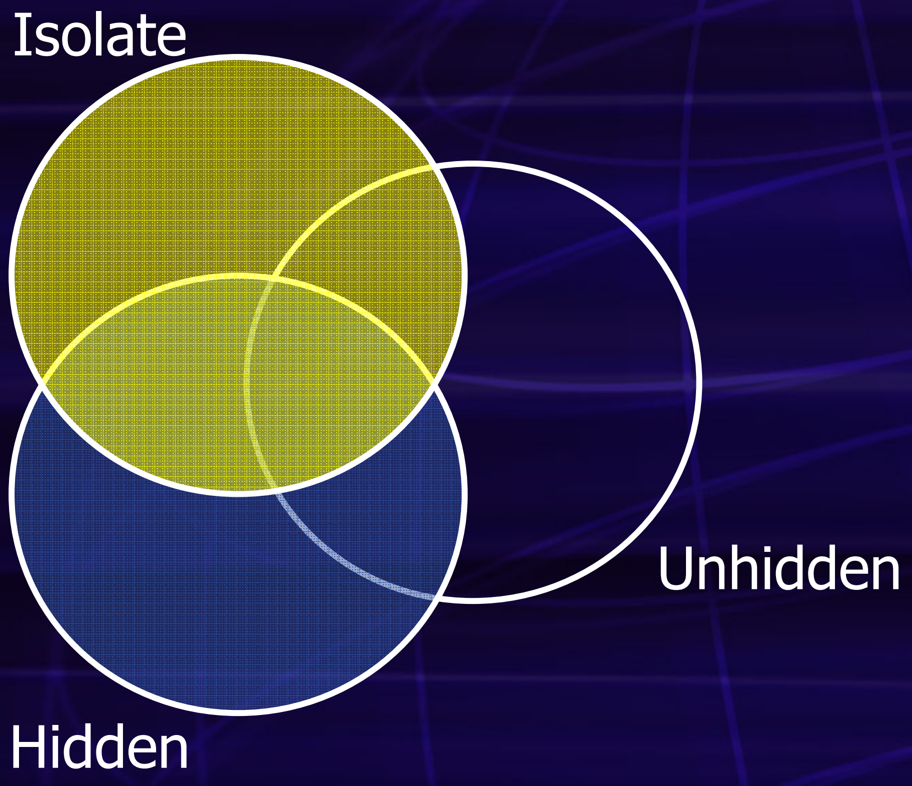

Coarse

Level of Control

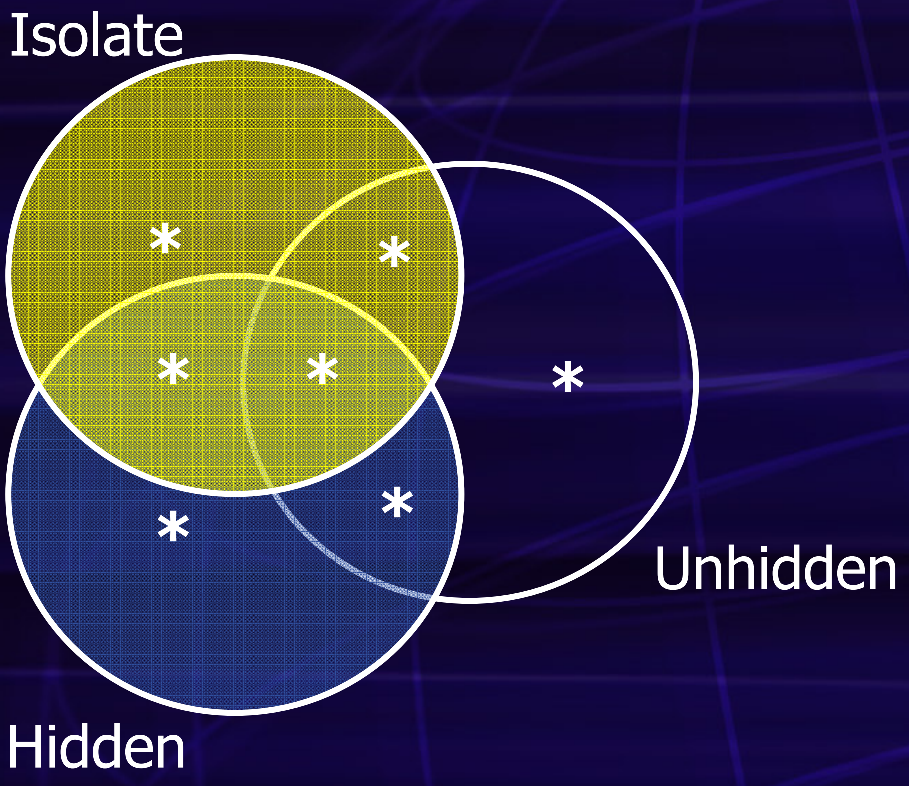
Fine

* This is a fundamental in Pro/Engineer.

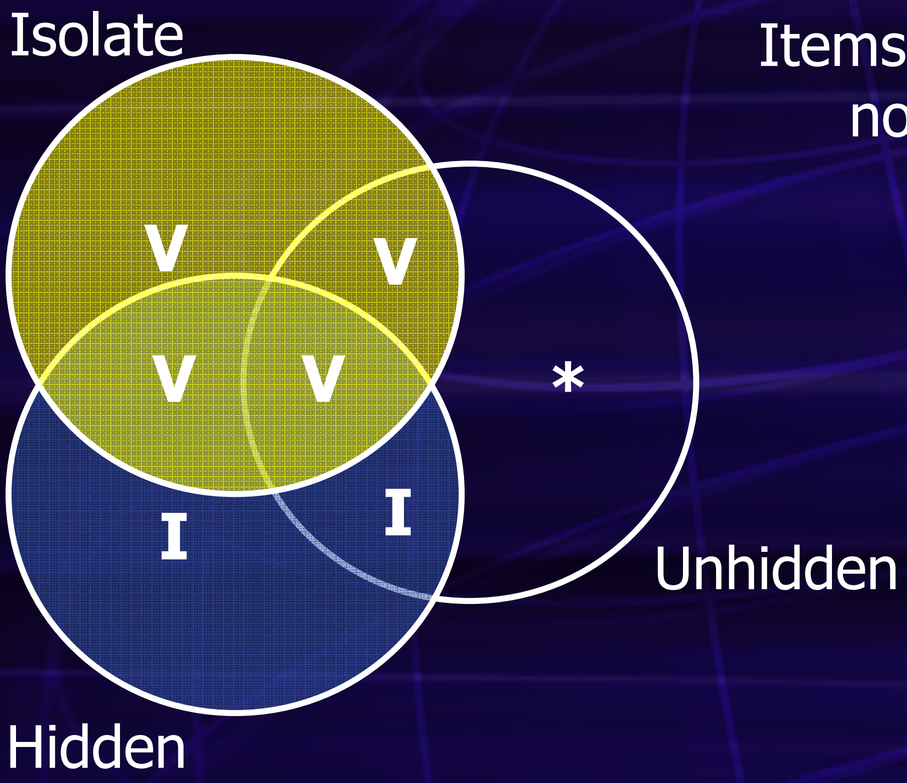
Layer Status Diagram (Parts)



Layer Status Diagram (Parts)

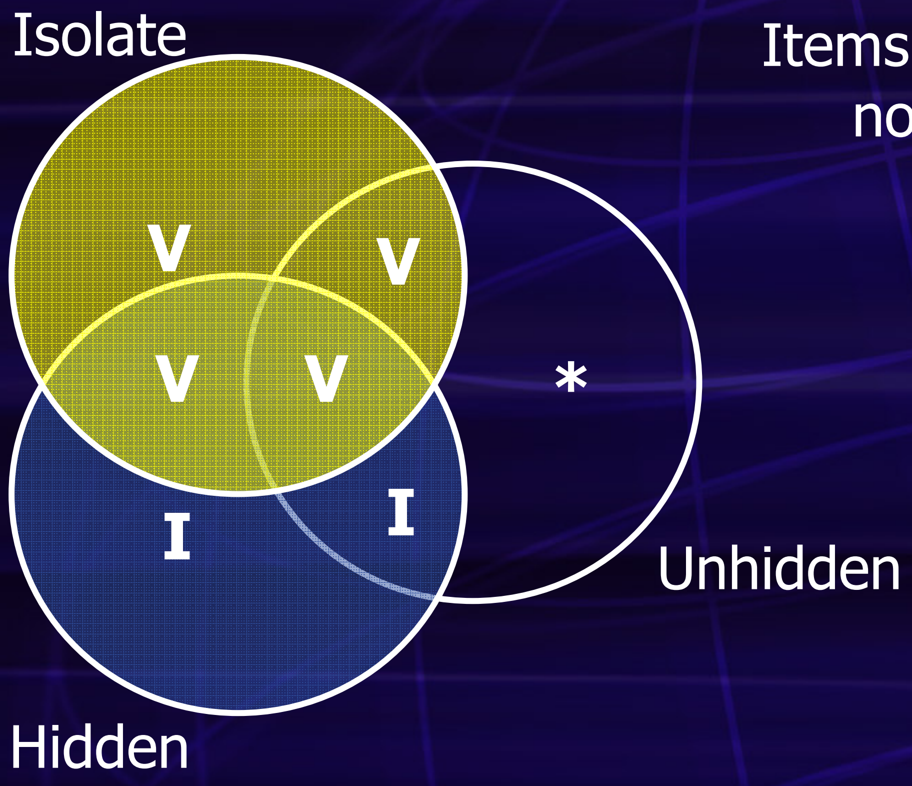


Layer Status Diagram (Parts)



Items not on layers are nominally visible

Layer Status Diagram (Parts)



Items not on layers are nominally visible

Assembly

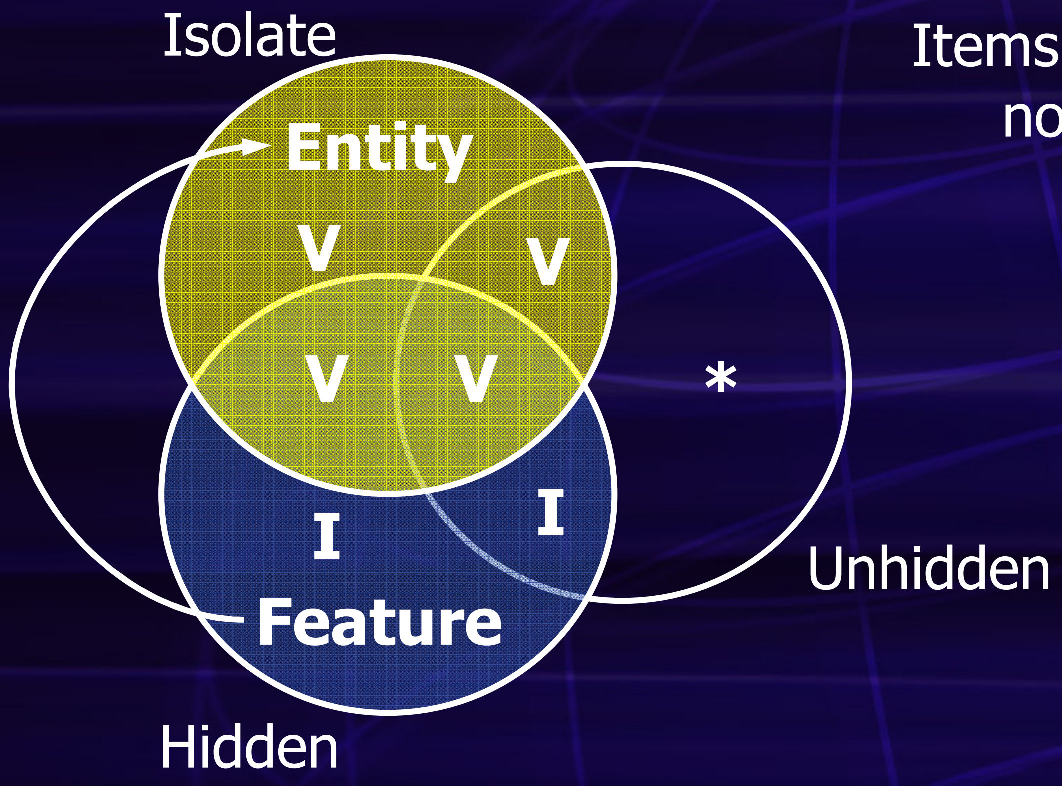
Part

Feature

Entity

Remember, Invisibility Rule #1 still applies.

Layer Status Diagram (Parts)



Items not on layers are nominally visible

Assembly

Part

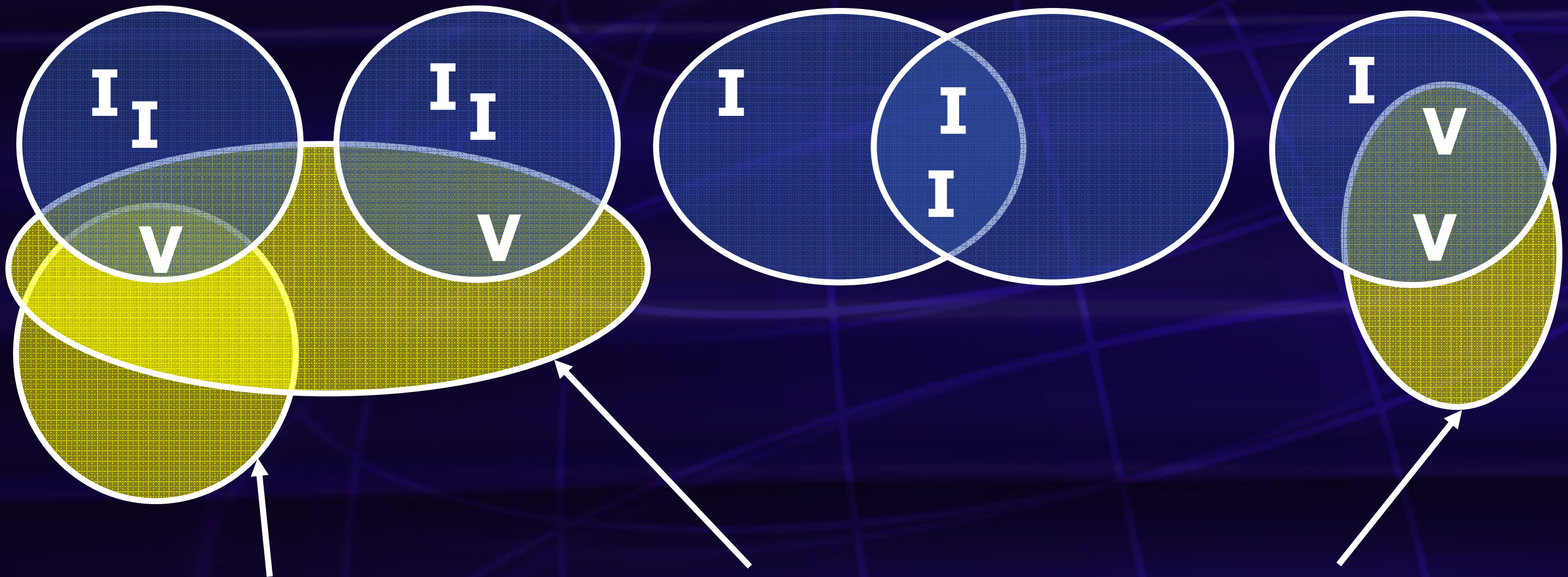
Feature

Entity

Remember, Invisibility Rule #1 still applies.

Choosing What You Want to See (Isolate)

CURVES SURFACES PLANES SET-DATUMS CSYS



BEAM-CENTERLINE LAYER

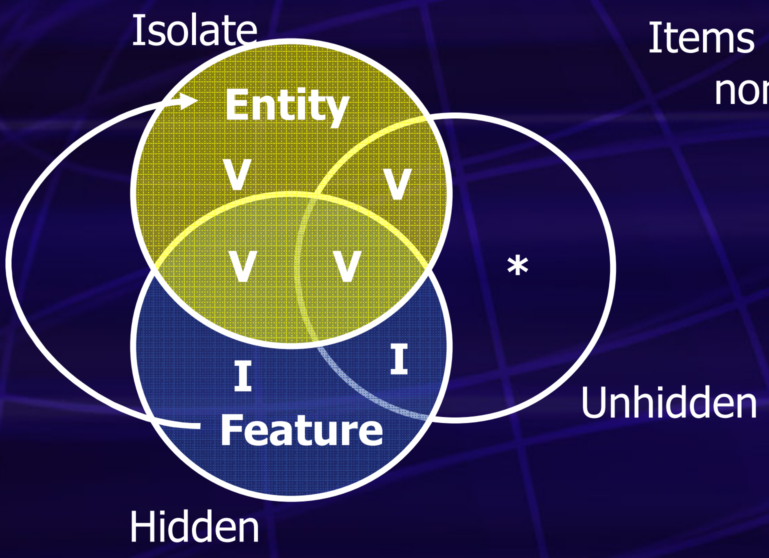
BEAMPATH LAYER

OPTIC-LOCATIONS LAYER

Hidden 5X

Isolated 3X

Layer Status Diagram (Assemblies)



Items not on layers are nominally visible

Remember, Visibility Rule #1 still applies.

- *Every aspect of layers in an assembly is the same as in parts, until a component is added to a layer – then things change, boy do they!*

Layer Status (Assemblies)

About putting components on layers…

My Advice: Don't do it!

Simplified Reps are better for managing component visibilities

Putting It Together

- Use Isolate in place of Unhidden.
  - Putting items on multiple layers becomes useful.
  - Creating new layers need not disturb existing layers.
  - Choose what you want to see, instead of everything you don't.
- Create, all inclusive, default layers only for the items found in the majority of your models. Don't remove items from them, with Isolate, it isn't necessary.
- Create layers that suit your needs.
- Save all layers with the status Hidden. Make exceptions only for things that need to be seen in ALL upper assemblies.

Demo: Config.pro, Drawing.dtl & Mapkeys

- Config.pro
  - no def_layer options
  - add_lower_level_comps_to_layer no
  - Make the environment display options on by default.
- Drawing.dtl
  - ignore_model_layer_status yes
  - draw_layer_overrides_model yes

Demo’s

- Cleaning an Assembly
  - Using find to create layers.
  - Using the extend function to create layers, with rules, recursively.
  - Searching for items in the layer tree.
  - Using the selector to manipulate the layer tree.
  - How to distinguish between entities and features.
  - The quick cleanup demo.
- Drawings & Parts
  - Create drawing layers, use them to keep changes to the model from impacting the drawing.
- Skeletons
  - Layers to fit special requirements.

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